

IN THE CLAIMS:

1. (Currently Amended) A honeycomb structure having a large number of through-holes formed in the axial direction and defined by partition walls, wherein slits are formed so as to be exposed to at least part of the outer surface of the honeycomb structure along the axial direction and wherein the honeycomb structure is made of a material containing, as a main crystal phase, at least one member selected from the group consisting of cordierite, SiC, SiN, alumina, mullite, aluminum titanate and lithium aluminum silicate.

2. (Original) A honeycomb structure according to Claim 1, wherein the slits are formed in parallel to the direction of the through-holes.

3. (Original) A honeycomb structure according to Claim 1, wherein the slits are formed at least at one end surface at least at the edge.

4. (Original) A honeycomb structure according to Claim 3, wherein the length of each slit formed at the edge of one end

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surface is, in the axial direction of the outer surface, 10% or more of the total length of the honeycomb structure and, at the end surface, 10% or more of the diameter of the honeycomb structure.

5. (Previously presented) A honeycomb structure according to Claim 1, wherein each slit is exposed to at least one end surface so as to connect the two points of the end surface edge.

6. (Original) A honeycomb structure according to Claim 5, wherein the length of each slit is, in the axial direction of the outer surface, 10% or more of the total length of the honeycomb structure and, at the end surface, 10% or more of the diameter of the honeycomb structure.

7. (Previously presented) A honeycomb structure according to Claim 1, wherein each slit is exposed to the outer surface over its total length in the through-hole direction.

8. (Previously presented) A honeycomb structure according to Claim 1, wherein in each section of the honeycomb structure including each slit there is a continuous area in which no slit is

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formed and which is not exposed to the outer surface of the honeycomb structure.

9. (Previously presented) A honeycomb structure according to Claim 1, wherein in the honeycomb structure section which is normal to the through-holes and in which the length of each slit is largest, the length of each slit is 10% or more of the distance between the outer surface along the axial direction and the center of the honeycomb structure.

10. (Previously presented) A honeycomb structure according to Claim 1, wherein in the honeycomb section which is normal to the through-holes and in which the length of each slit is largest, the length of each slit is 30% or more of the distance between the outer surface along the axial direction and the center of the honeycomb structure.

11. (Previously presented) A honeycomb structure according to Claim 1, wherein each slit is filled with a filler.

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12. (Previously presented) A honeycomb structure according to Claim 1, which is a combination of two or more honeycomb segments.

13. (Canceled)

14. (Previously presented) A honeycomb structure according to Claim 1, which loads thereon a metal having a catalytic action and is usable for purification of the exhaust gas emitted from a heat engine or a burner, or for reforming of a liquid fuel or a gaseous fuel.

15. (Original) A honeycomb structure according to Claim 14, wherein the metal having a catalytic action is at least one kind selected from Pt, Pd and Rh.

16. (Previously presented) A honeycomb structure according to Claim 1, wherein the sectional shape of the through-holes is any of a triangle, a tetragon, a hexagon and a corrugation.

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17. (Previously presented) A honeycomb structure according to Claim 1, wherein the partition walls surrounding the through-holes have a filtration ability, a given proportion of the through-holes are blocked at one end and the remaining through-holes are blocked at other end.

18. (Original) A honeycomb structure according to Claim 17, which is used as a filter for capturing and removing the particulate matter contained in a dust-containing fluid.